

ABSTRACT

Compositions and methods for increasing the fluorescence intensity of molecules are provided. In particular, compositions and methods directed to increasing the intrinsic
5 fluorescence of biomolecules and low quantum yield fluorophores are described. The intrinsic fluorescence of biomolecules is increased by positioning a metal particle and a biomolecule at a distance apart sufficient to increase the radiative decay rate of the biomolecule. Methods for the identification of nucleic acids are also provided. The compositions and methods can also be used to increase the emission of any fluorophore, such as the extrinsic probes used to label
10 biomolecules.